

Comparison of treatment removal requirements.

Requirement	Primary treatment	California Ocean Plan	San Diego Permit	Secondary treatment
Suspended Solids Removal	30% as 30-day average	75% as 30-day average	80% as a 30-day average	85% as 30-day average
Biochemical Oxygen Demand Removal	30% as 30-day average	No Requirement	58% as an annual average	85% as 30-day average

SUMMARY OF THE NINE 301(h) CRITERIA

WATER QUALITY

must be at least primary level and must meet State water quality standards

must be water quality standards for the waiver pollutants (TSS and BOD)

must have permit limits for the waiver pollutants (TSS and BOD)

BENEFICIAL USES

must protect fish and wildlife and must protect recreational activities

TOXICS

must have an approved pretreatment program

must comply with the urban area pretreatment requirements

must have a non-industrial source control program

must not result in any additional treatment requirements for other sources

MONITORING

must have a monitoring program to evaluate the impact of the discharge on the biota

Biochemical Oxygen Demand

CRITERIA

No State requirement for removal

Dissolved oxygen standard in California Ocean Plan (no more than 10% depression)

MONITORING

BOD measured in influent/effluent on a daily basis

Dissolved oxygen monitored on a monthly basis (depth profiles at 19 stations)

ASSESSMENT

No Dissolved Oxygen problems in coastal waters off San Diego

Dissolved Oxygen depressions predicted by models are less than 10%

Do not see 10% depression in monitoring data

TOXICS

CRITERIA

Water Quality Standards in Ocean Plan

MONITORING

Monitoring of Influent and Effluent

Metals on a weekly basis

Organics on a monthly basis

ASSESSMENT

Concentrations in influent/effluent have decreased dramatically over past 30 years

Concentrations in effluent low relative to permit limits

Concentrations receiving water meeting water quality standards

Continued monitoring of effluent to evaluate trends in effluent

Performance based effluent benchmarks act as trigger for increases in mass loadings

TOXICS IN SEDIMENT

CRITERIA

COP narrative standard - no toxics in toxic amounts

Compared to thresholds in literature

Compared to background concentrations from regional surveys

MONITORING

21 fixed location stations sampled on a quarterly basis since 1991

grain size, organic carbon, metals, organic pollutants

Regional surveys on an annual basis since 1994 (~40 random stations per year)

ASSESSMENT

Some organic enrichment near the outfall

Very little evidence of contaminant build-up around the outfall

Contaminant concentrations similar to regional background

Concentrations below sediment toxicity thresholds from literature

BENEFICIAL USES - BIOLOGY - BENTHOS

CRITERIA

COP Narrative standard “No degradation of benthic communities”

Locally developed benthic indices (Infaunal Trophic Index, Benthic Response Index)

Comparison to results from regional survey

MONITORING

23 fixed stations sampled on a quarterly basis

Regional surveys on an annual basis (~40 random station)

ASSESSMENT

Higher abundances and species richness near the outfall

Values in the range of expectation from reference values

Benthic indices pick up outfall pattern but indicate a healthy community

BENEFICIAL USES - BIOLOGY - FISH

CRITERIA

COP Narrative standard: “no degradation of fish communities”

Comparison of fish communities before and after

Comparison of fish communities near and away from the outfall

MONITORING

Fish trawls at 8 stations on a quarterly basis (since 1991)

Analysis of fish tissue for potential bioaccumulation of toxic contaminants

ASSESSMENT

No temporal or spatial patterns in fish community measurements

No temporal or spatial patterns in toxic contaminants in fish tissue

Fish tissue concentrations similar to background

Generally low relative to human health risk screening levels

BENEFICIAL USES - RECREATION - BACTERIA

CRITERIA

Basin Plan Objectives for bacteria at Kelp bed and shoreline

MONITORING

Offshore sampling at 19 stations at multiple depths (Monthly)

Kelp bed sampling at 8 stations at 3 depths (5 X per Month)

Shoreline sampling at 9 stations (weekly to biweekly)

ASSESSMENT

Offshore data indicates plume is trapped at depth

Kelp bed data indicates compliance with water quality standard

Occasional shoreline exceedances not associated with outfall

MONITORING PROGRAM FOR THE POINT LOMA TREATMENT PLANT

Water Quality

Temperature, Salinity, Dissolved Oxygen, Light Transmittance, pH	46 stations	monthly	depth profiles
Suspended Solids, Oil and Grease	26 stations	monthly	3 depths

Bacteria

Total Coliform, Fecal Coliform, Enterococcus	9 shoreline stations	weekly to biweekly	surface
	8 kelpbed stations	5 times per month	3 depths
	19 offshore stations	monthly	3 to 6 depths

Sediment Chemistry	21 stations	quarterly	single grab
Benthic Communities	23 stations	quarterly	duplicate grabs
Fish Communities	8 stations	quarterly	single trawls

Bioaccumulation

Trawl Fish	8 stations	semi-annual	1 fish species
Rig Fish	2 areas	semi-annual	1 fish species

Hello my name is Terry Fleming I was the staff person assigned to review the City's 301(h) renewal application and prepare EPA's Tentative Decision Document.

I have been asked to provide an overview of the analysis that went behind our tentative decision.

The last time I spoke to the Board on the City's 301(h) application was 5 years ago. The discharge out the extended outfall had only recently begun. So while we had we had 4 years of pre-discharge baseline data we only had one year of monitoring data reflecting the impact of the discharge. We now have an additional 5-years of data to better evaluate the effect of the discharge.

I don't have the time to show all the analyses that we did in preparation of the TDD, but I would like to walk you through the process and thinking that led to our tentative decision.

[OVERHEAD #1. SUMMARY OF NINE 301(h) CRITERIA]

The nine 301(h) criteria are designed to ensure that

**The proposed variance will not effect water quality
That aquatic resources and recreational uses are protected
That there are provisions to reduce toxics
And that there is an adequate monitoring program to assess compliance
and assess the impact of the discharge**

[OVERHEAD #2. COMPARISON OF TREATMENT REMOVAL REQS.]

The City is requesting that the existing variance from the secondary treatment requirements for TSS and BOD removal be renewed.

Under secondary treatment the City would be required to remove 85% of TSS and BOD as a 30-day average.

Under the draft permit the City is required to remove 80% of TSS on a monthly average and 58% of BOD as an annual average.

In practice the City has been removing about 86% of TSS and 60% of BOD on a monthly average.

[OVERHEAD #3. BIOCHEMICAL OXYGEN DEMAND]

I want to talk a little bit about how we evaluated the effects of BOD. As we saw in the previous overhead, the California Ocean Plan does not have a requirement for BOD removal. The effects of BOD are evaluated relative to the dissolved oxygen standard for ocean waters, which states that dissolved oxygen concentrations shall not be depressed more than 10% percent as a result of the discharge.

To evaluate the effect of the discharge on DO in the receiving water we evaluated the results of monitoring data collected each month from 19 offshore stations. Based on these results we do not see any DO problems in the coastal waters of San Diego.

[OVERHEAD #4. MAP OF WATER QUALITY STATIONS]

The overhead gives you a feel for the station locations.

We also do use models to perform worst-case assessments of the potential DO impacts. The worst-case predictions are well below the 10% threshold in the California Ocean Plan.

[OVERHEAD #5. ASSESSMENT FOR TOXICS]

We evaluate toxics in effluent against permit limits which are based on the water quality standards in the California Ocean Plan.

More than 80 toxicants identified in the California Ocean Plan are monitored in both the influent and effluent on at least a monthly basis.

Concentrations of toxics in both the influent and effluent have decreased dramatically over the past 30 years.

These decreases reflect the success of the pretreatment requirements to remove pollutants before they enter the system.

[OVERHEAD #6. TRENDS IN METALS LOADINGS]

Our review of the past five-years worth of effluent data indicates that concentrations in the effluent are low relative to the permit limits and that water quality standards are being attained.

Influent and effluent monitoring will continue to part of the City's permit to

help us evaluate trends. The permit also contains performance based effluent benchmarks which serve as a baseline for comparison.

[OVERHEAD #7. TOXICS IN SEDIMENT]

In the receiving environment, we look at sediments to ensure that toxic contaminants are not building up in sediments around the outfall.

Samples are collected and analyzed for a variety of chemical contaminants from a grid of 21 offshore stations on a quarterly basis. In addition the City has been collecting samples from randomly selected locations which help to provide information on background concentrations.

Because the California Ocean Plan does not have numeric standards for sediment contaminants we compare the values to threshold values from the literature (such as the NOAA ER-Ls and ER-Ms).

The data are also compared to the background concentrations from the regional samples.

We concluded that there was some evidence of organic enrichment in the area around the outfall, but very little evidence that contaminants are building up in the area around the outfall.

Our review of the data indicated that contaminant concentrations were below sediment toxicity thresholds from the literature and similar to background concentrations in the Southern California Bight.

[OVERHEAD #8. SEDIMENT STATION LOCATIONS]

[OVERHEAD #9. REGIONAL SAMPLING STATION]

[OVERHEAD #10. BOD AT 320-FOOT CONTOUR STATIONS]

[OVERHEAD #11. BOD AT REGIONAL STATIONS]

[OVERHEAD #12. BENTHIC EFFECTS]

The monitoring of benthic communities is similar. There are 23 stations which are measured on a quarterly basis. Benthic samples were also collected at all the regional sites.

To interpret the narrative standard in the Ocean Plan, we look for spatial or temporal patterns which might indicate an outfall effect. We then compare the data to against our expectations for healthy communities. This can be done using well-established indices of benthic health or by comparing the data to background data. In the TDD we do both.

We see higher abundances and species richness near the outfall. The benthic indices pick up outfall-related patterns but indicate healthy benthic communities. The range of values we see around the outfall are well within the range of expectations from background data.

[OVERHEAD #13. ITI AT 320-FOOT STATIONS]

[OVERHEAD #14. ITI VALUES FROM REGIONAL SURVEY]

[OVERHEAD #15. AFFECTS ON FISH]

To evaluate the effects of the outfall on fish community, we again have to interpret the narrative standards of the Ocean Plan. We do this by looking for changes in fish community structure or contaminant body burden that might be attributable to the outfall.

Fish trawls are conducted on a quarterly basis at 8 stations. Twice a year a the muscle and liver tissue of selected fish species are analyzed for a variety of toxic contaminants.

We found no patterns in either species composition or fish tissue concentration. Contaminant concentrations were similar to background concentrations and generally low relative to human health risk screening levels.

[OVERHEAD #16. LOCATION OF FISH TRAWL STATIONS]

[OVERHEAD #17. BACTERIA]

The City has a fairly extensive monitoring program for bacteria. They monitor the water column in the area around the outfall on a monthly basis, the area around the kelp beds on a weekly basis, and the shoreline area on a weekly to biweekly basis.

Bacteria are measured in the offshore sampling program to help identify the plume. The California Ocean Plan criteria apply to kelp beds and shoreline samples.

Our assessment indicates that the offshore plume is generally trapped at depth. Five years of data from the kelp bed stations indicate 100% compliance with the water quality standard. Although we see occasional exceedances of shoreline standards, there is no data to suggest that this is related to the outfall.

This is supported by physical oceanographic modeling that suggests that the plume remains offshore at depth and the lack of any violations at the kelp bed stations which are located between the offshore stations and the shoreline stations.

As you can see the City's monitoring program generates a tremendous amount of data to evaluate compliance and assess the impacts of the outfall.

[OVERHEAD #18. SUMMARY OF MONITORING PROGRAM]

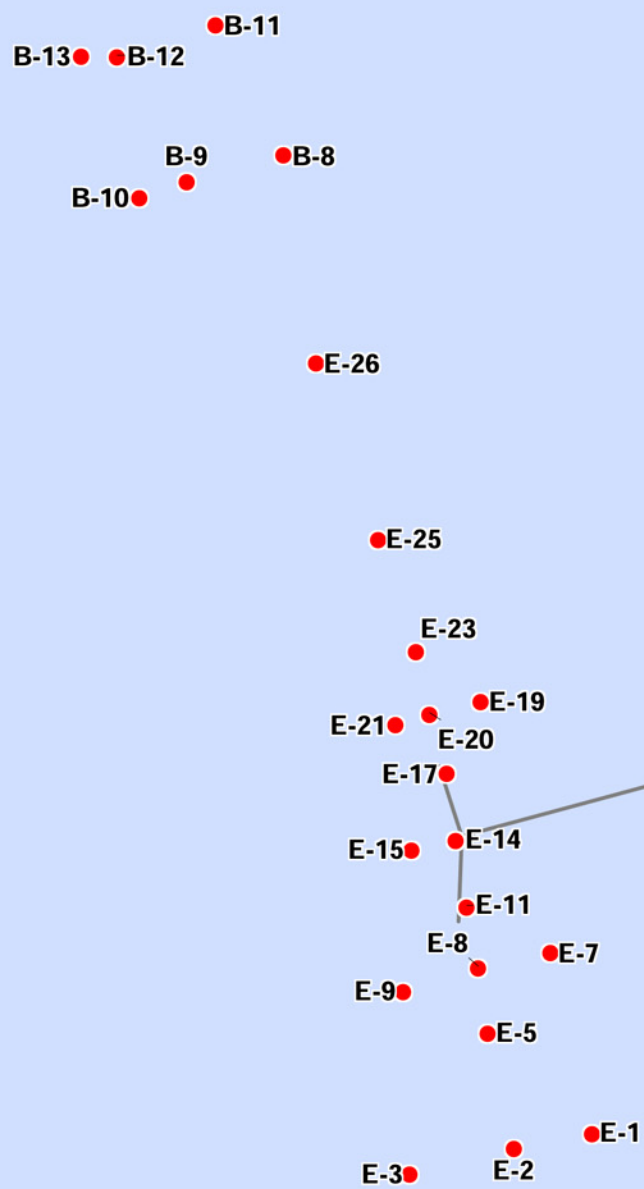
I hope that I have given you an appreciation for the types of analyses that are in the TDD. Our analysis of the 10-year data set indicates that the all water quality standards are being met and that beneficial uses are being protected.

Based on this analysis, EPA has tentatively concluded that the proposed discharge meets these nine 301(h) criteria, as well as the other applicable requirements, and that the renewal of the variance is warranted.

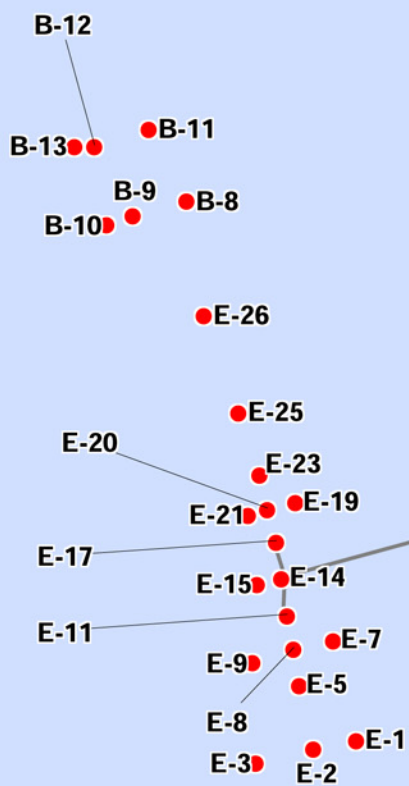
I thank you for your time and consideration.

I would be happy to entertain any questions from the Board.

Sediment Station Locations



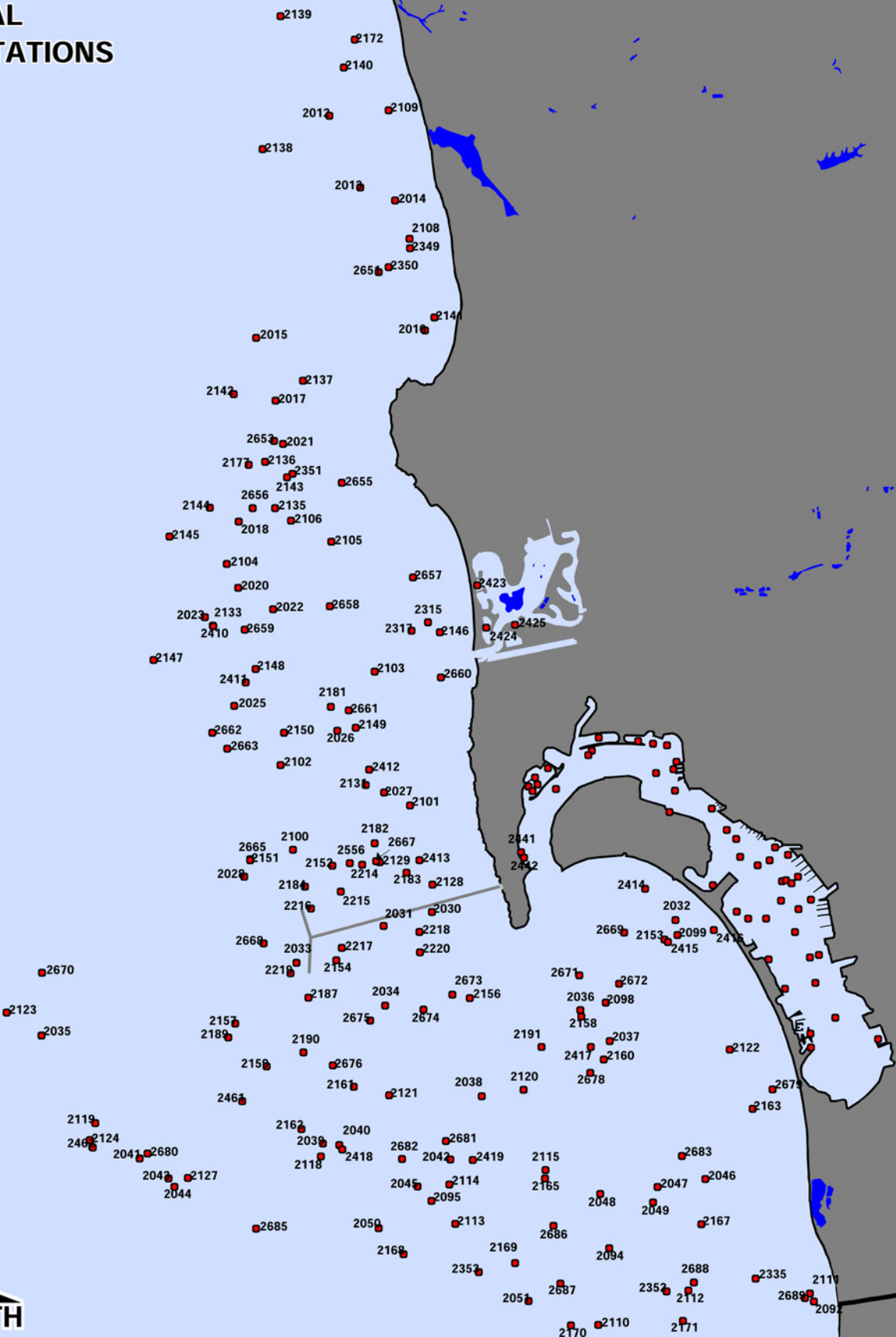
Sediment Station Locations



NORTH

0 2 4
miles

REGIONAL
BIGHT STATIONS



NORTH

0 2 4
miles

Fish Trawl Locations

●SD-14

●SD-13

SD-12●

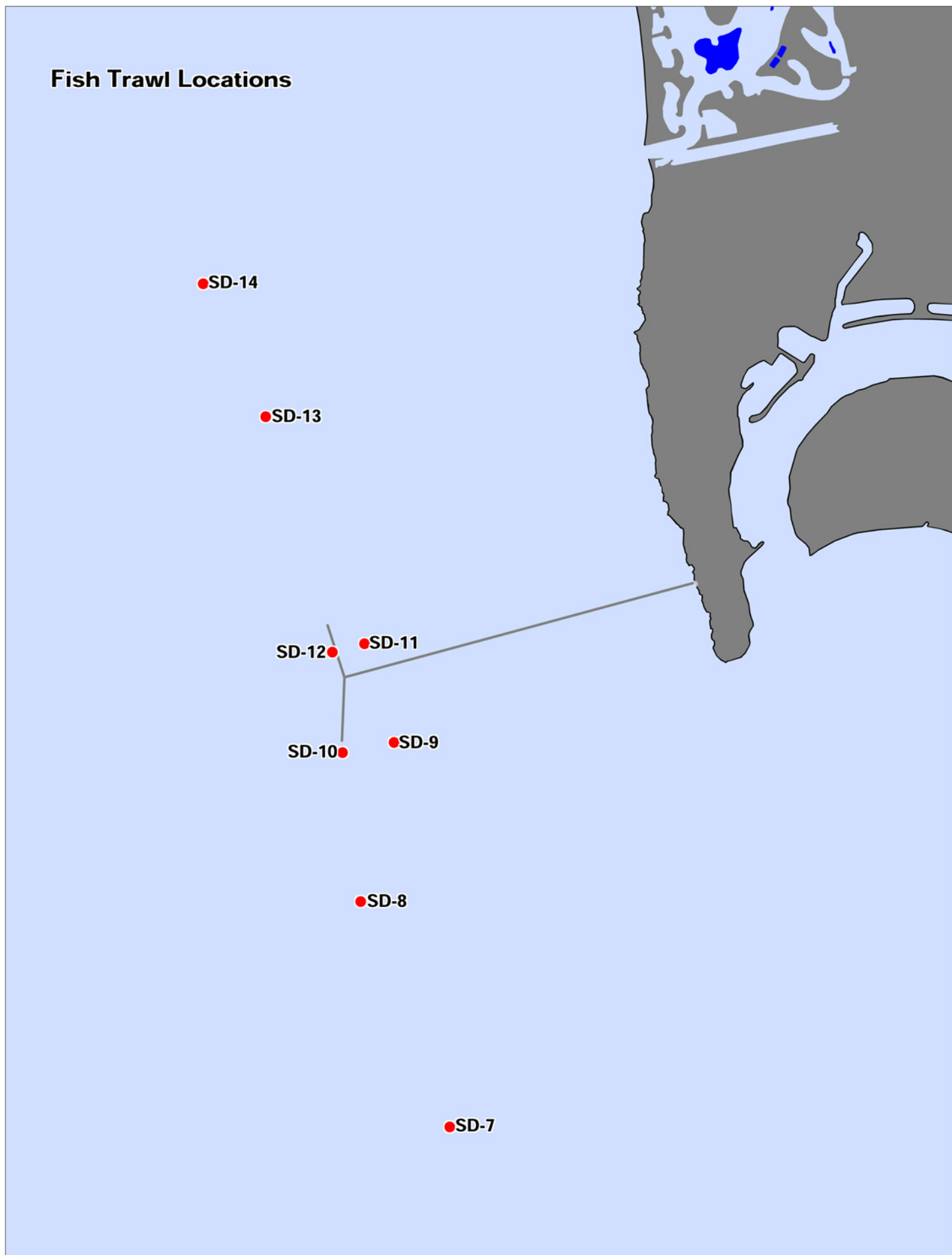
●SD-11

SD-10●

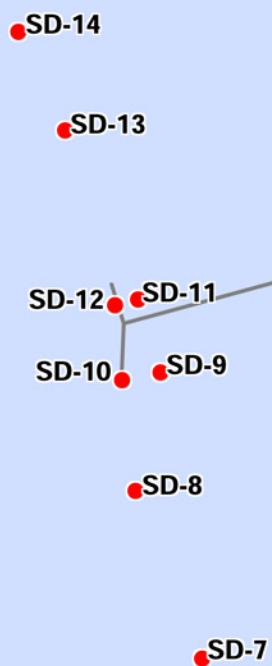
●SD-9

●SD-8

●SD-7



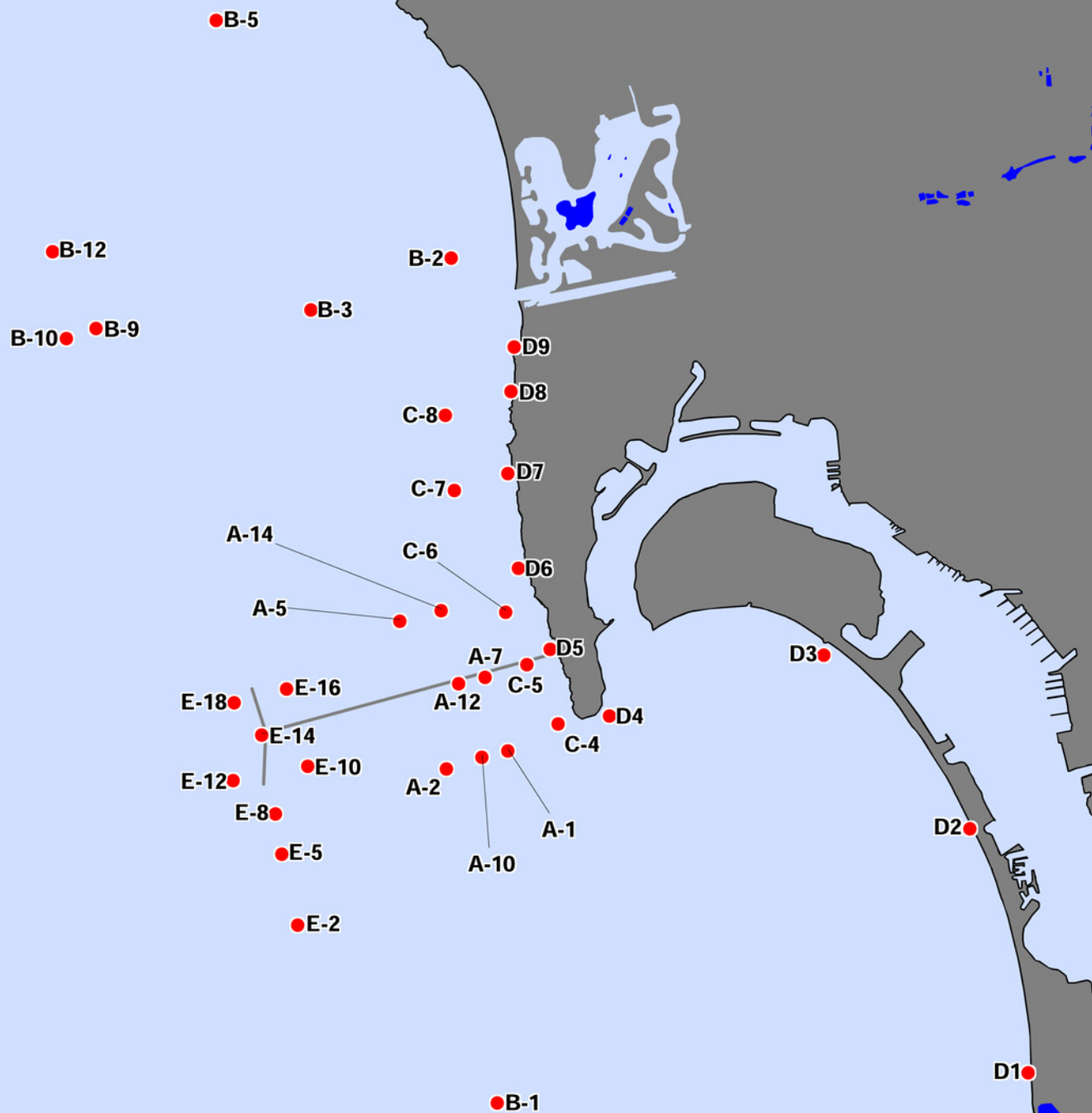
Fish Trawl Locations



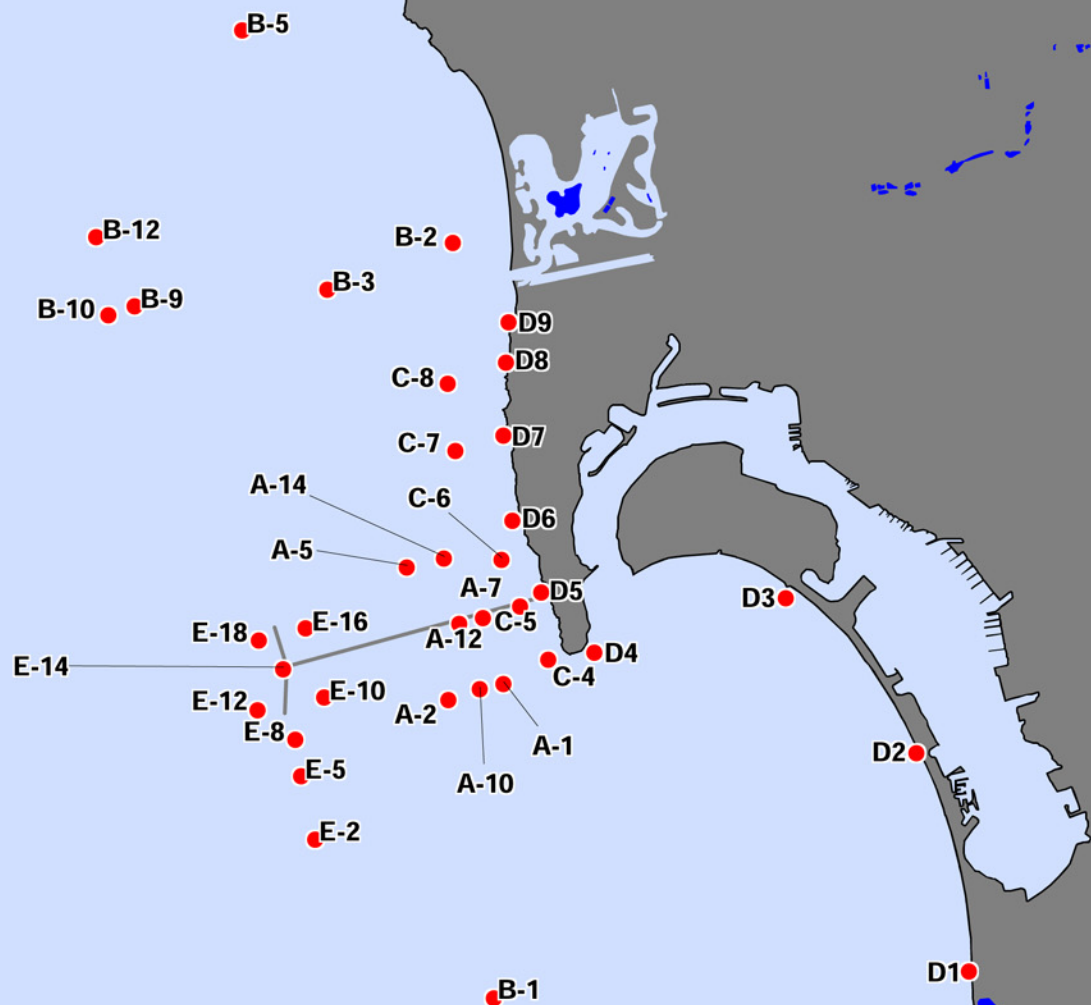
NORTH



Shoreline Water Quality and Bacteria Station Locations



Shoreline Water Quality and Bacteria Station Locations



NORTH

0 2 4
miles

**Figure 35. Depth distribution of ITI values
from San Diego Regional Surveys (1994-1999)**

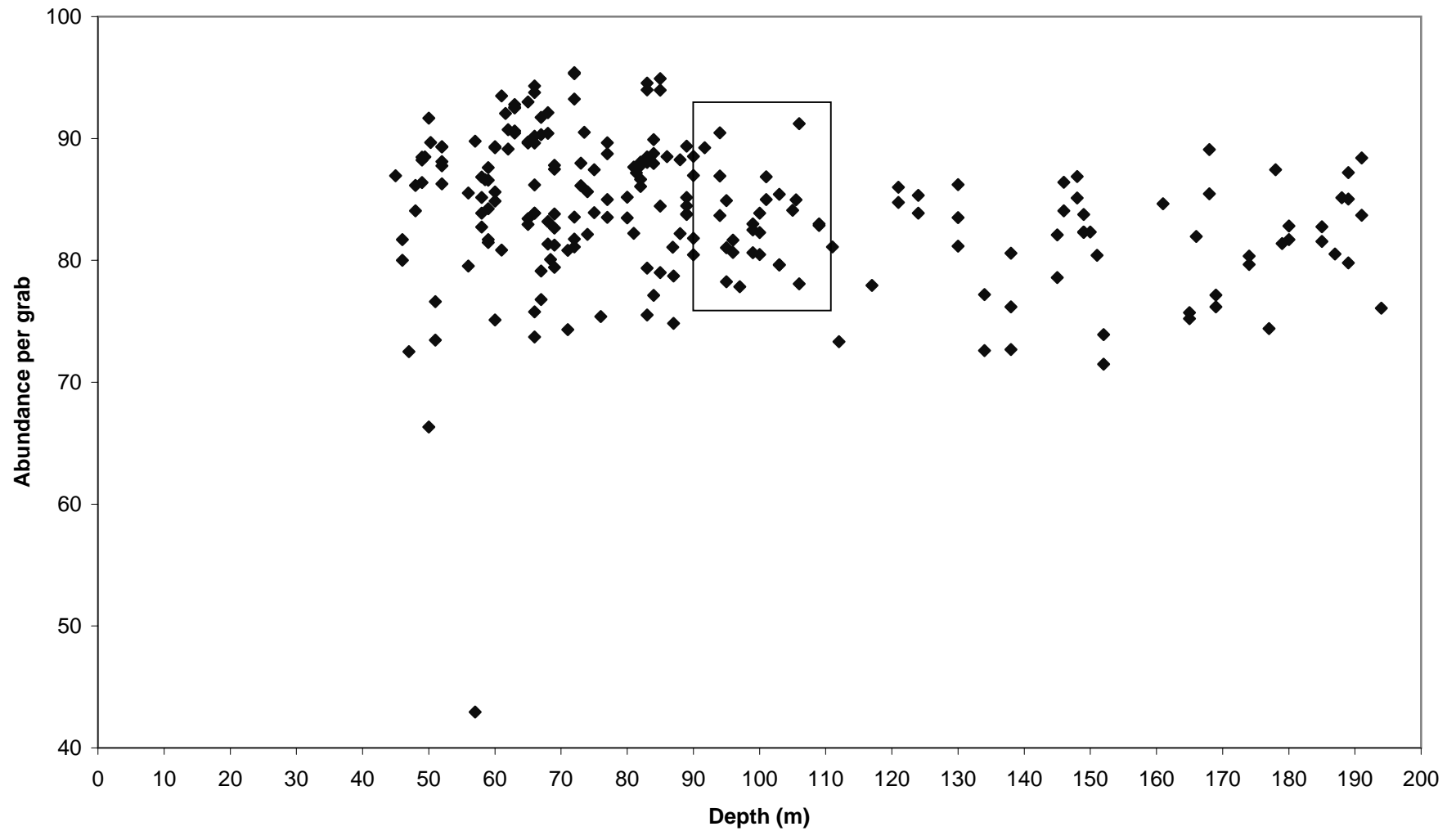


Figure 34. Infaunal Trophic Index values at the 100-meter stations

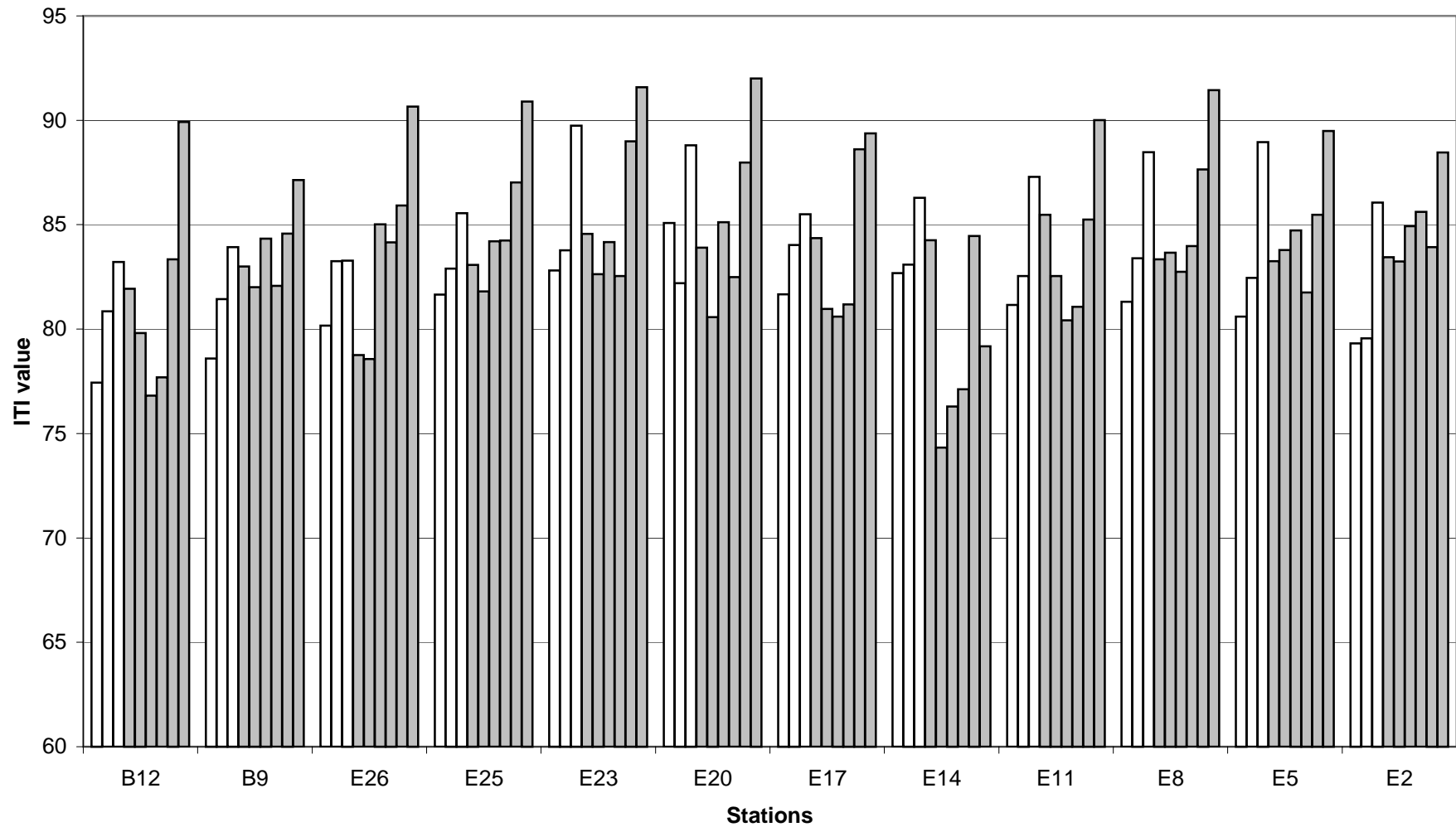
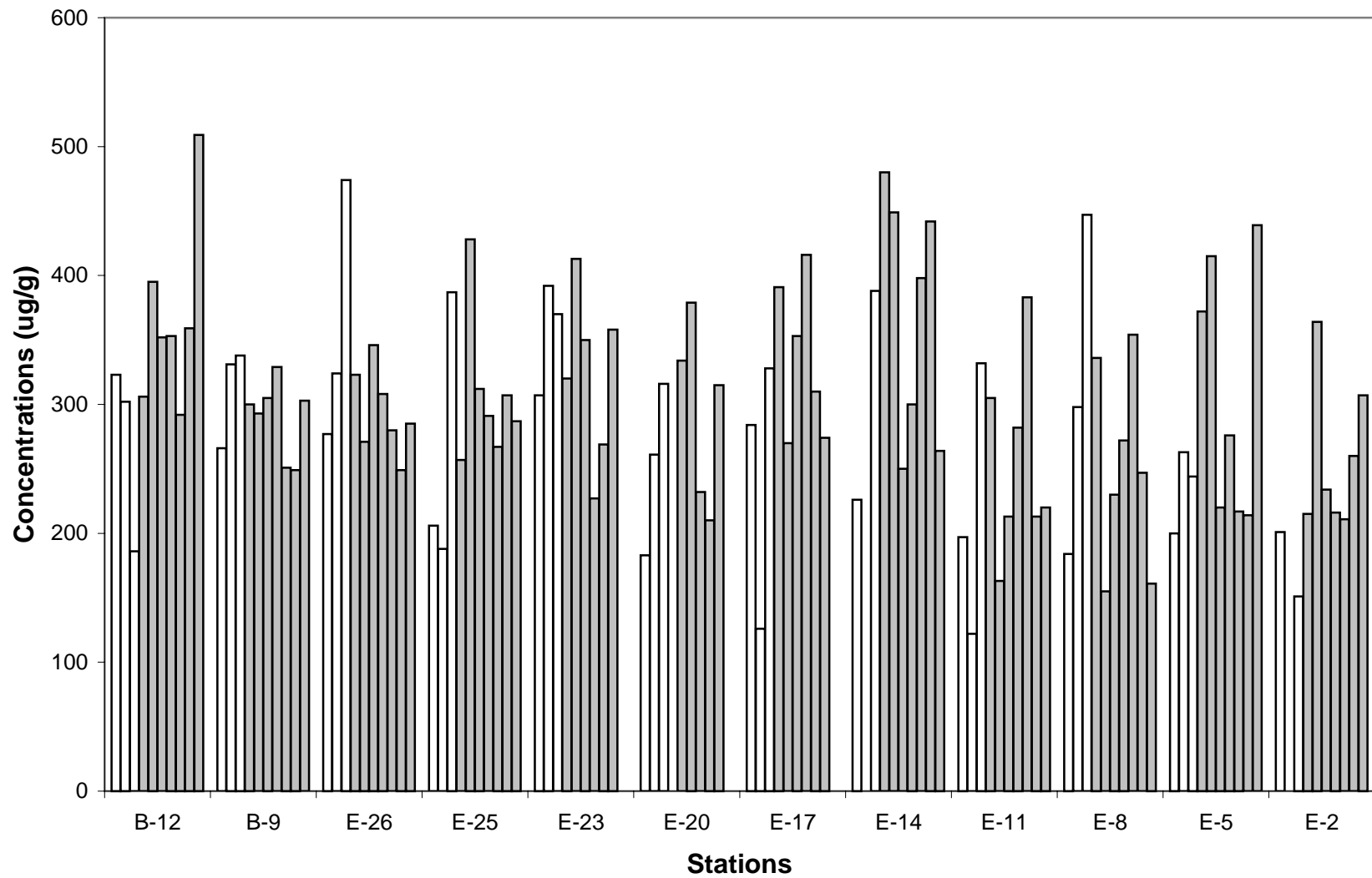
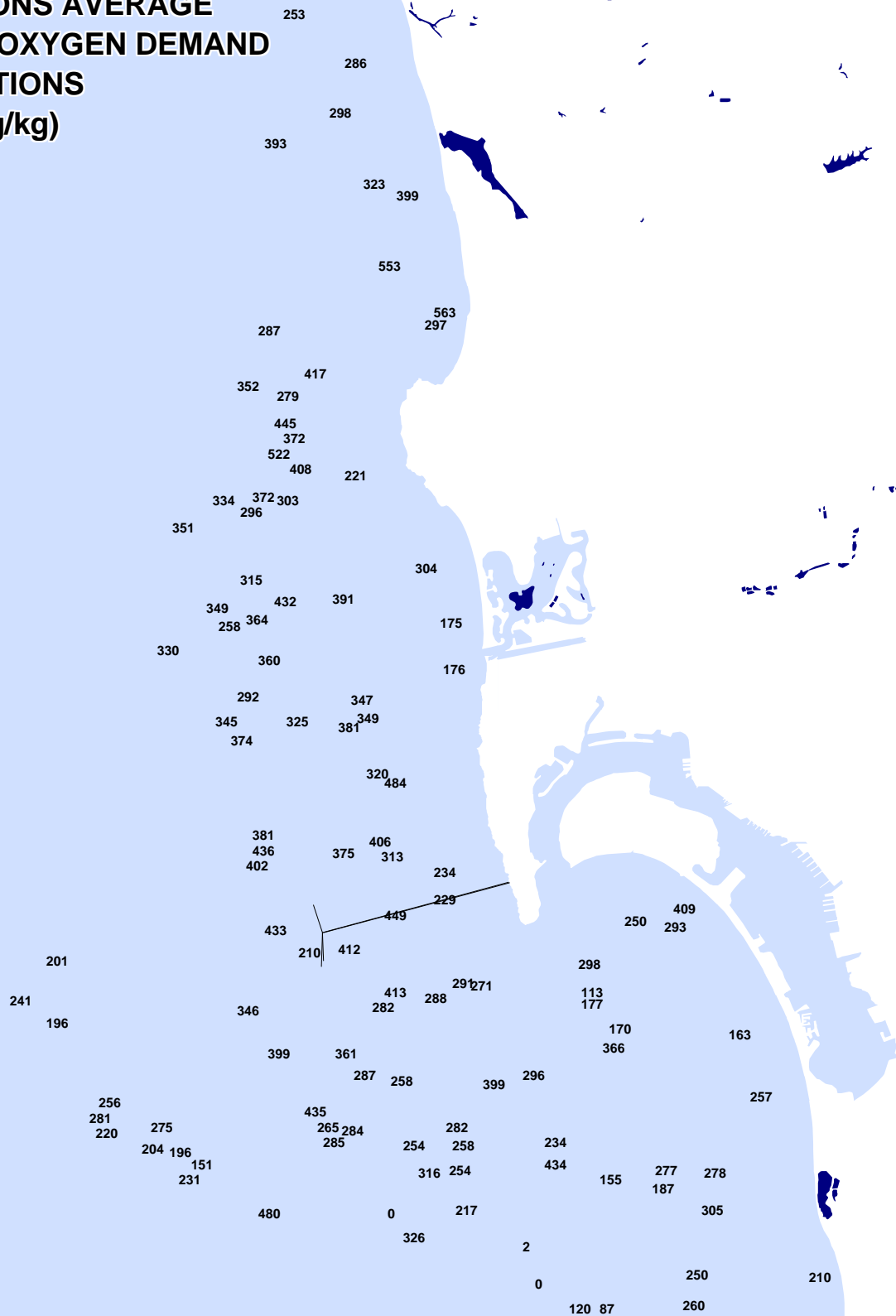


Figure 12. Sediment BOD concentration at the 100-meter stations (1991-2000)



**REGIONAL
BIGHT STATIONS AVERAGE
BIOLOGICAL OXYGEN DEMAND
CONCENTRATIONS
1995-1999 (mg/kg)**



0 2 4
miles